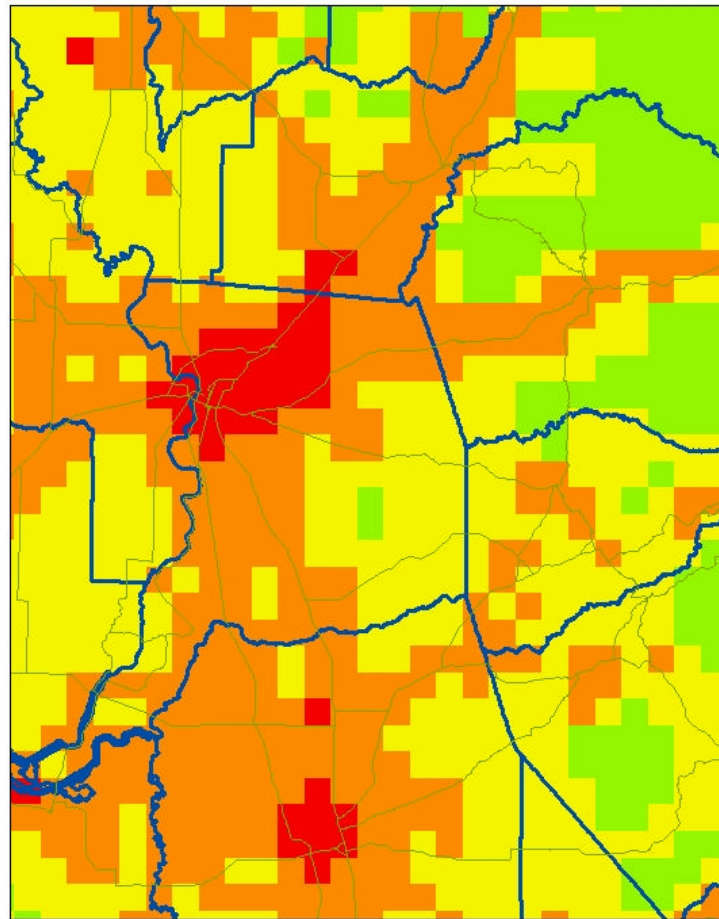
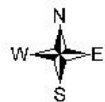


# ‘Gridded’ Emissions

**Emission Scale (kg/day)**  
emsrun\_smry\_gridcell\_polid.NOX\_20000731.tot\_kg  
0.0  
0.1 - 100.0  
10.1 - 100.0  
100.1 - 1000.0  
1000.1 - 10000.0  
roads arc





# **Meteorological Modeling**

- Photochemical Models Need Surface and Elevated Information
- Measurement Data Alone is Insufficient
- Meteorological Models Are Used to ‘Fill in the gaps’

# **Meteorological Model Inputs**

- Gridded Land Use
- Gridded Terrain
- Observed Data
- Other Information

# **Meteorological Model Output**

- 3-D Wind Speed and Direction
- Temperature
- Mixing Depths
- Solar Radiation

# Model Output (cont.)

- Removal Rates
  - Calculated Hourly in Every Grid Cell
  - Uses Resistance Approach and Considers:
    - Turbulence
    - Plant Canopy
    - Plant or Ground Surface

$$\text{(Rate)} \times \text{(Concentration)} = \text{Amount Removed}$$

# Observed Data

- Measurements are needed to initialize the model and validate its results
  - Surface
  - Aloft

